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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,849	11/25/2003	Joel A. Kubby	D/A1063D	6941

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EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/721,849

Applicant(s)

KUBBY ET AL.

Examiner

Kevin S Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 25 November 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/25/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. The abstract of the disclosure is objected to because it does not describe the invention being claimed. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1 and 8-11 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,625,356 to Ticknor et al.

Referring to claim 1, Ticknor et al. discloses all the limitations of the claimed invention. Ticknor et al. discloses a micro-optical device having an aligned waveguide switch, comprising: a stationary input part with a plurality of input waveguides (1110,1111); a stationary output part with a plurality of output waveguides (1130,1131); a movable part (905) with a plurality of switching waveguides, the movable part being movable relative to the stationary input and output parts; and at least one stop block (907,908) that limits movement of the movable part to align at least one of the switching waveguides with at least one of the input waveguides and at least one of the output waveguides. See Fig. 9A through Fig. 11, along with their respective portions of the specification.

Referring to claim 8, Ticknor et al. discloses all the limitations of the claimed method. Ticknor et al. discloses a method of fabricating a micro-optical device having an aligned waveguide switch, comprising: forming a stationary input part with a plurality of input waveguides (1110,1111); forming a stationary output part with a plurality of output waveguides (1130,1131); a movable part (905) with a plurality of switching waveguides, the movable part being movable relative to the stationary input and output parts; and forming at least one stop block (907,908) that limits movement of the

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movable part to align at least one of the switching waveguides with at least one of the input waveguides and at least one of the output waveguides. See Fig. 9A through Fig. 11, along with their respective portions of the specification.

Referring to claim 9, Ticknor et al. discloses all the limitations of the claimed method. Ticknor et al. discloses the forming the plurality of waveguides comprises defining a set of offsets between the waveguides of the movable part and the waveguides of the stationary input and output parts (1110,1111,1130,1131), and wherein forming the at least one stop block (907,908) comprises defining the at least one stop block with the set of offsets. See Fig. 9A through Fig. 11, along with their respective portions of the specification. Ticknor clearly discloses spacing or offsets between each of the waveguides and that the stop blocks are designed so that when the movable part contacts the stop blocks, the offset is accounted for and to make sure the waveguides that are intended to be coupled are properly aligned.

Referring to claims 10 and 11, Ticknor et al. discloses all the limitations of the claimed method. Ticknor et al. discloses the at least one stop block comprises defining at least one edge of the movable part with the set of offsets and defining at least one bumper connected to the movable part with the offsets. See Fig. 9A through Fig. 11, along with their respective portions of the specification. It is clear that the edges of the movable part (905) have been designed to account for the offset between the waveguides and to act as a bumper for the stop blocks, in order to make sure the waveguides that are intended to be coupled are properly aligned.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 2-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,625,356 to Ticknor et al.

Referring to claim 2, Ticknor et al. discloses all the limitations of the claimed invention, except Ticknor et al. does not appear to specifically disclose that the stationary input part, the stationary output part and the movable part comprise a single-crystal-silicon layer. Ticknor et al. does disclose that these parts are formed of silicon. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a single-crystal-silicon to form the parts, since it has been

held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Referring to claim 3, Ticknor et al. discloses all the limitations of the claimed invention, except Ticknor et al. does not appear to specifically disclose that the stop blocks comprise a single-crystal-silicon layer. Ticknor et al. does disclose that these blocks are formed of silicon. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a single-crystal-silicon to form the stop blocks, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Referring to claims 4 and 6, Ticknor et al. discloses all the limitations of the claimed invention, except Ticknor et al. does not appear to specifically disclose that the stop blocks comprises a polysilicon layer. Ticknor et al. does disclose that these blocks are formed from a silicon wafer or layer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use polysilicon layers to form the stop blocks, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Referring to claims 5 and 7, Ticknor et al. discloses all the limitations of the claimed invention, except Ticknor et al. does not appear to specifically disclose that the bumper comprises a polysilicon layer. Ticknor et al. does disclose that these bumper or edge of the moveable part contacting the stop block is formed of silicon. It would

have been obvious to one having ordinary skill in the art at the time the invention was made to use a polysilicon layer to form the bumper, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use. *In re Leshin*, 125 USPQ 416.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 6,574,385 to Irwin

U.S. Patent No. 6,487,330 to Horino et al.

U.S. Patent No. 6,421,477 to Hane et al.

U.S. Patent No. 6,192,171 to Goodman et al.

U.S. Patent No. 6,169,826 to Nishiyama et al.

U.S. Patent No. 5,828,800 to Henry et al.

Each of these references discloses an optical switch that includes a stationary input waveguides section, a stationary output waveguide section and a movable waveguide part between them for selectively switching light between the input waveguide(s) and the output waveguide(s).


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (571) 272-2364. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KSW


AKM ENAYET ULLAH
PRIMARY EXAMINER